

V. AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) An exhaust gas deNOx apparatus for an engine comprising an NOx adsorber catalyst in an exhaust pipe line of an engine, for adsorbing NOx when an air fuel ratio of an exhaust gas flowing therein is in a lean state and releasing NOx when the air fuel ratio of the exhaust gas flowing therein is in a rich state, the exhaust gas deNOx apparatus comprising:

at least one exhaust gas recirculating circuit for mixing the exhaust gas into intake air;

a plurality of recirculating circuit adjusting valves ~~each having an open position and a closed position~~ being arranged in parallel with said at least one exhaust gas recirculating circuit and operative to independently open and close each one of the adjusting valves; and

exhaust gas recirculating amount control means for recirculating a predetermined amount of exhaust gas through said at least one exhaust gas recirculating circuit while maintaining one of said adjusting valves in an ~~the~~ open position for reducing NOx when an adsorbed NOx accumulation amount is not more than a predetermined value, and for recirculating more than said predetermined amount of exhaust gas through said at least one exhaust gas recirculating circuit by opening said adjusting valves to the open position to bring the air fuel ratio into a rich state when the adsorbed NOx accumulation amount exceeds the predetermined value and the NOx is to be released.

2. (PREVIOUSLY PRESENTED) The exhaust gas deNOx apparatus for an engine according to Claim 1,

wherein said exhaust gas recirculating amount control means adjusts an exhaust gas recirculating amount, which is fed when the air fuel ratio of the exhaust gas flowing into said NOx adsorber catalyst is brought into a rich state, so that an excess air ratio is more than 1.0 and is about 1.3 or less.

3. (PREVIOUSLY PRESENTED) The exhaust gas deNOx apparatus for an engine according to Claim 1 or Claim 2,
wherein said exhaust gas recirculating amount control means comprises
at least any one of an intake air throttle valve free to be opened and closed,
which is provided in a pipe line of an intake pipe of said engine, and an exhaust
gas throttle valve free to be opened and closed, which is provided in a pipe line
of an exhaust pipe of said engine, and
a controller,
wherein said controller outputs a control signal for decreasing a
degree of opening of either one of said intake air throttle valve or said exhaust
gas throttle valve when the air fuel ratio of the exhaust gas is to be brought into a
rich state.

4. (CANCELED)

5. (CANCELED)

6. (CANCELED)

7. (CURRENTLY AMENDED) An exhaust gas deNOx apparatus for
an engine comprising an NOx adsorber catalyst in an exhaust pipe line of an
engine, for adsorbing NOx when an air fuel ratio of an exhaust gas flowing
therein is in a lean state and releasing NOx when the air fuel ratio of the exhaust
gas flowing therein is in a rich state, the exhaust gas deNOx apparatus
comprising:

| at least one ~~an~~ exhaust gas recirculating circuit for mixing the
exhaust gas into intake air; and

| exhaust gas recirculating amount control means for recirculating a
predetermined amount of exhaust gas through said at least one exhaust gas
recirculating circuit for reducing NOx when an adsorbed NOx accumulation

amount is not more than a predetermined value, and for recirculating more than said predetermined amount of exhaust gas through said at least one exhaust gas recirculating circuit to bring the air fuel ratio into a rich state when the adsorbed NOx accumulation amount exceeds the predetermined value and the NOx is to be released; and

a plurality of recirculating circuit adjusting valves being arranged in parallel with said at least one exhaust gas recirculating circuit and operative to independently open and close each one of the adjusting valves;

~~wherein said exhaust gas recirculating circuit comprises a single exhaust gas recirculating circuit provided with a plurality of recirculating circuit adjusting valves in parallel;~~

wherein said exhaust gas recirculating amount control means comprises said plurality of recirculating circuit adjusting valves, NOx amount detection means for detecting an NOx amount, and a controller for calculating an NOx accumulation amount in said NOx adsorber catalyst based on the NOx amount outputted from said NOx amount detection means and determining whether said calculated NOx accumulation amount is a predetermined value or less, or not,

and

wherein when said calculated NOx accumulation amount exceeds a predetermined value, said controller outputs a control signal to increase a total opening area of said plurality of recirculating circuit adjusting valves to be larger than that in a lean state and makes the air fuel ratio of the exhaust gas of said engine rich.

8. (PREVIOUSLY PRESENTED) The exhaust gas deNOx apparatus for an engine according to Claim 7,

wherein said exhaust gas recirculating amount control means comprises at least one of an intake air throttle valve free to be opened and closed, which is provided in a pipe line of an intake pipe of said engine, and an

exhaust gas throttle valve free to be opened and closed, which is provided in a pipe line of an exhaust pipe of said engine,

wherein said controller further outputs a control signal to decrease a degree of opening of either one of said intake air throttle valve or said exhaust gas throttle valve when the air fuel ratio of the exhaust gas is to be made rich.

9. (PREVIOUSLY PRESENTED) The exhaust gas deNOx apparatus for an engine according to Claim 7, further comprising:

a turbocharger provided at said engine; and

an air bleed valve free to be opened and closed, which is provided at an outlet port of a compressor of said turbocharger, extracts supply air to an outside, and constitutes said exhaust gas recirculating amount control means,

wherein said controller further outputs a control signal to open said air bleed valve when the air fuel ratio of the exhaust gas of said engine is to be made rich.

10. (PREVIOUSLY PRESENTED) The exhaust gas deNOx apparatus for an engine according to Claim 1 or Claim 2,

wherein a turbocharger is provided at said engine, and

wherein said exhaust gas recirculating amount control means comprises an air bleed valve free to be opened and closed, which is provided at an outlet port of a compressor of said turbocharger and extracts supply air to an outside, and a controller for outputting a control signal to open said air bleed valve when the air fuel ratio of the exhaust gas of said engine is to be made rich.

11. (PREVIOUSLY PRESENTED) The exhaust gas deNOx apparatus for an engine according to Claim 1 or Claim 2,

wherein said exhaust gas recirculating amount control means comprises fuel supply means for supplying fuel into at least one of cylinders of said engine and an exhaust pipe of said engine,

wherein when the air fuel ratio of the exhaust gas is to be brought into a rich state, said fuel supply means supplies fuel as an adjustment amount to provide an air fuel ratio that allows said NOx adsorber catalyst to release and reduce NOx.

12. (CANCELED)

13. (PREVIOUSLY PRESENTED) The exhaust gas deNOx apparatus for an engine according to Claim 7,

wherein said exhaust gas recirculating amount control means comprises fuel supply means for supplying fuel into at least one of cylinders of said engine and an exhaust pipe of said engine, and

wherein when the air fuel ratio of the exhaust gas is to be brought into a rich state, said fuel supply means supplies fuel as an adjustment amount to provide the air fuel ratio that allows said NOx adsorber catalyst to release and reduce NOx.

14. (PREVIOUSLY PRESENTED) The exhaust gas deNOx apparatus for an engine according to Claim 1 or Claim 2,

wherein said exhaust gas recirculating amount control means comprises load detection means for detecting a load of said engine; and a controller, and

wherein said controller inputs a detection signal from said load detection means, and when the detected load is a predetermined value or less, it brings the air fuel ratio of the exhaust gas into a rich state.

15. (PREVIOUSLY PRESENTED) The exhaust gas deNOx apparatus for an engine according to Claim 1 or Claim 2,

wherein said exhaust gas recirculating amount control means comprises a variable turbocharger provided at said engine, for making a degree of opening of a turbine passage variable, and a controller, and

wherein when the air fuel ratio of the exhaust gas is to be brought into a rich state, said controller outputs a control signal to decrease the degree of opening of said turbine passage.

16. (CANCELED)

17. (CANCELED)

18. (PREVIOUSLY PRESENTED) The exhaust gas deNO_x apparatus for an engine according to Claim 1, further comprising a turbocharger provided at said engine wherein said exhaust gas recirculating circuit comprises a passage connected between an upstream side of an exhaust turbine of the turbocharger and a downstream side of a compressor of the turbocharger.